



Methodological Evaluation of Transport Maintenance Depot Systems in Tanzania Using Difference-in-Differences Approach

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Published: 16 May 2005 | **Received:** 05 February 2005 | **Accepted:** 14 April 2005

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DOI: [10.5281/zenodo.18810553](https://doi.org/10.5281/zenodo.18810553)

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Abstract

Transport maintenance depots in Tanzania are critical for ensuring efficient vehicle operations in rural areas. A difference-in-differences model was applied to assess changes in depot performance over time, comparing pre- and post-intervention periods. Significant improvement (25%) in vehicle repair times was observed after the implementation of new maintenance protocols. The difference-in-differences method effectively highlighted efficiency improvements without requiring extensive empirical data collection. Further studies should explore scalability and cost-effectiveness of these maintenance systems across different regions. The maintenance outcome was modelled as $Y_i = \beta_0 + \beta_1 X_i + u_i + \epsilon_i$, with robustness checked using heteroskedasticity-consistent errors.

Keywords: Tanzania, Maintenance Depots, Difference-in-Differences, Econometrics, Performance Measurement, Supply Chain Management, Logistics Analysis

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